sintered metal oxide sensor; a phthalocyanine sensor; an electrochemical cell; a conducting polymer sensor; a catalytic gas sensor; an organic semiconducting gas sensor; a solid electrolyte gas sensor; a temperature sensor; a humidity sensor; fiber optic micromirrors; dye impregnated polymeric coatings on optical fibers and a Langmuir-Blodgett film sensor. Those of skill in the art will know of other sensors suitable for use in the present invention.

[0050] In certain aspects, the sensors of the present invention comprise a chiral center. For instance, European Patent Application No. 0 794 428, published Sep. 10, 1997, describes sensors capable of distinguishing between enantiomers. The sensor comprise a pair of spaced apart contacts and a conducting polymer material spanning the gap. The polymer has chiral sites in the polymer material formed by incorporating optically active counter ions such as camphor sulfonic acid.

[0051] Moreover, WO 99/40423, published Aug. 12, 1999, discloses sensor arrays of that are capable of distinguishing or differentiating between chiral compounds. That publication relates to a device for detecting the presence or absence of an analyte in a fluid, the device comprises a sensor, the sensor comprising a chiral region. The sensor comprises a conductive region and a nonconductive region, wherein at least one of the conductive and nonconductive regions is chiral, and wherein the analyte generates a differential response across the sensor.

[0052] In certain other embodiments, the sensor arrays of the present invention comprise sensors disclosed in WO 99/00663, published Jan. 7, 1999. As taught therein, a combinatorial approach for preparing arrays of chemically sensitive polymer-based sensors are capable of detecting the presence of a chemical analyte in a fluid contact therewith. The described methods and devices comprise combining varying ratios of at least first and second organic materials which, when combined, form a polymer or polymer blend that is capable of absorbing a chemical analyte, thereby providing a detectable response. The detectable response of the sensors prepared by this method is not linearly related to the mole fraction of at least one of the polymer-based components of the sensor.

[0053] The following examples are offered by way of illustration and not by way of limitation.

EXAMPLES

Example 1

[0054] This Example illustrates the difference in percolation threshold in non-aligned sensors versus aligned sensors.

[0055] The percolation threshold is defined as the particle volume fraction at which the conductivity of the resistor increases rapidly i.e., an infinite number of conductive paths are formed and the lattice essentially transforms from an insulator to a conductor. **FIG. 1** illustrates atypical resistance versus volume loading for a non-aligned composite sensor, where the percolation threshold occurs at about 20 volume percent filler. **FIG. 2** shows a graph of resistance versus volume loading for a composite sensor where the particles have been aligned. The percolation threshold occurs at about 5 volume percent filler.

Example 2

[0056] This Example illustrates a sensor array that was fabricated by depositing Black Pearl 2000 (40 wt %) dispersed in 1,2-polybutadiene in the presence of an electric field.

[0057] The conductive particles respond to the field by migrating to minimum energy states, which in this case corresponds to chain-like structures aligned parallel to the electric field. As the solvent evaporates the chains are locked in place. **FIG. 3** illustrates the particle alignment after using 48 volts across the sensor electrodes during the deposition process.

[0058] All publications, patents and patent applications mentioned in this specification are herein incorporated by reference into the specification in their entirety for all purposes. Although the invention has been described with reference to preferred embodiments and examples thereof, the scope of the present invention is not limited only to those described embodiments. As will be apparent to persons skilled in the art, modifications and adaptations to the above-described invention can be made without departing from the spirit and scope of the invention, which is defined and circumscribed by the appended claims.

What is claimed is:

1. A sensor array for detecting an analyte in a fluid, said sensor array comprising: first and second sensors wherein said first sensor comprises a region of aligned conductive material; and wherein said sensor array is electrically connected to an electrical measuring apparatus.

2. The sensor array for detecting an analyte in a fluid in accordance with claim 1, wherein said first and said second sensors are first and second chemically sensitive resistors, each of the chemically sensitive resistors comprising: a plurality of alternating regions comprising a nonconductive region and an aligned conductive region that is compositionally different than the nonconductive region, wherein each resistor provides an electrical path through said nonconductive region and the aligned conductive region; a first electrical resistance when contacted with a first fluid comprising an analyte at a first concentration; and a second electrical resistance when contacted with a second fluid comprising said analyte at a second different concentration.

3. The sensor array for detecting an analyte in a fluid in accordance with claim 1, wherein said conductive region is aligned by exposure to a member selected from the group consisting of an electric field, a thermal field, a magnetic field, an electromagnetic field, a photoelectric field, a light field, a mechanical field, and combinations thereof.

4. The sensor array for detecting an analyte in a fluid in accordance with claim 3, wherein said conductive region is electrically aligned.

5. The sensor array for detecting an analyte in a fluid in accordance with claim 3, wherein said conductive region is magnetically aligned.

6. The sensor array for detecting an analyte in a fluid in accordance with claim 3, wherein said conductive region is photolytically aligned.

7. The sensor array for detecting an analyte in a fluid in accordance with claim 1, wherein said aligned conductive material is a member selected from the group consisting of